

WHAT IS CLAIMED IS:

1. A printed circuit board (PCB) antenna capable of receiving four operating bands, comprising:
a substrate;
5 an A-side metal electrode plate, printed on one side of the substrate, the A-side metal electrode plate grounded to a reflection plane to form a U opening, the U opening having symmetric metal sheet on left and right sides respectively, each symmetric sheet having a plurality of fragments to form an intermittent metal plane, a plurality of metal ring electrodes and a plurality of metal connecting sheets implemented in a middle portion of the U opening; and
10 a B-side metal electrode plate, located on the other side of the substrate and circuit-shorted to one of the metal ring electrodes of the A-side metal electrode plate.
- 15 2. The PCB antenna as claimed in claim 1, wherein the plurality of metal ring electrodes are two ring electrodes with different sizes.
- 20 3. The PCB antenna as claimed in claim 2, wherein the plurality of metal ring electrodes are four ring electrodes.
4. The PCB antenna as claimed in claim 2, wherein the plurality of metal connecting sheets are four metal connecting sheets, and respectively connected between the metal ring electrodes, one of the metal ring electrodes extended toward a bottom of the U opening.
5. The PCB antenna as claimed in claim 2, wherein

the plurality of metal ring electrodes respectively have an internal diameter and an external diameter, a ratio of the internal diameter to the external diameter about 0.25.

6. The PCB antenna as claimed in claim 1, wherein

5 the plurality of fragments are six fragments.

7. The PCB antenna as claimed in claim 6, wherein
each fragment is 0.2-0.5 mm.

8. The PCB antenna as claimed in claim 1, wherein
one of the metal ring electrodes is circuit-shorted to the B-side metal
10 electrode plate.

9. The PCB antenna as claimed in claim 8, wherein
the one metal ring electrode is located at a top of the U opening.

10. The PCB antenna as claimed in claim 8, wherein
the one metal ring electrode is drilled.

15 11. The PCB antenna as claimed in claim 1, wherein
an extension at a top of the U opening of the A-side metal electrode
plate has a width of 3-2.2 multiple proportion to an extension at a top of the
B-side metal electrode plate.